
Stem cells treat Parkinson's disease in rats

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CIRM grantees at the Buck Institute for Age Research have treated a rat version of Parkinson's disease using transplanted cells that originated from iPS cells -- embryonic-like cells made from reprogramming adult cells. A press release from the Novato-based Buck Institute quotes CIRM president Alan Trouson as saying:

“The studies are very encouraging for potential cell therapies for Parkinson's disease. The researchers showed they could produce quantities of dopaminergic neurons necessary to improve the behavior of a rodent model of PD. We look forward to further work that could bring closer a new treatment for such a debilitating disease.”

The group led by Xianmin Zeng created iPS cells from adult skin and blood cells. The group coaxed the cells to divide and produce a particular kind of nerve cell that is damaged in Parkinson's disease, called dopaminergic neurons. They transplanted the neurons into rats with an induced form of Parkinson's disease and saw symptoms diminish. The disease, which effects 1.5 million Americans, results in tremor, slowness of movement and rigidity

According to the press release:

“The cells became functional and the rats showed improvement in their motor skills. Zeng said this is the first time iPSC-derived cells have been shown to engraft and ameliorate behavioral deficits in animals with PD. Dopamine-producing neurons derived from hESCs [human embryonic stem cells] have been demonstrated to survive and correct behavioral deficits in PD in the past. In addition to showing that cells derived from iPS cells could treat symptoms of Parkinson's disease, the group went one step farther. They also developed a way of creating the therapeutic cells that can be repeated in large quantities. That's important because any therapy based on this work would require large numbers of cells.

“Our approach will facilitate the adoption of protocols to good manufacturing practice standards, which is a pre-requisite if we are to move iPSC's into clinical trials in humans.”

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CIRM funding: Xianmin Zeng (CL1-00501-1)

Tags: Parkinson's Disease, Buck Institute, Zeng

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